

# **TEST REPORT**

Report No.:	BCTC2209980467E					
Applicant:	Shenzhen Minew Technologies Co.,Ltd.					
Product Name:	AoA Gateway					
Model/Type reference:	G2					
Tested Date:	2022-08-28 to 2022-11-16					
Issued Date:	2022-11-23					
She	enzhen BCTC Testing Co., Ltd.					
No.: BCTC/RF-EMC-005	Page: 1 of 74					



# FCC ID:2ABU6-G2

Product Name:	AoA Gateway
Trademark:	MINEW
Model/Type reference:	G2
Prepared For:	Shenzhen Minew Technologies Co.,Ltd.
Address:	3rd Floor, I Building, Gangzhilong Science Park, Qinglong Road, Longhua District, Shenzhen City, China
Manufacturer:	Shenzhen Minew Technologies Co.,Ltd.
Address:	Building 3, Instrument World Industrial Park, No. 306, Guanlan Guiyue Road, Longhua District, Shenzhen
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng , Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2022-08-26
Sample tested Date:	2022-08-28 to 2022-11-16
Report No.:	BCTC2209980467E
Test Standards:	FCC Part15.247 ANSI C63.10-2013
Test Results:	PASS
Remark:	This is WIFI-2.4GHz band radio test report.

Tested by:

Vave

Brave Zeng/ Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

No.: BCTC/RF-EMC-005

Page: 2 of 74



# Table of Content

<ol> <li>Version</li></ol>	.6 .7 .8 .8 .9
<ol> <li>Measurement Uncertainty</li> <li>Product Information and Test Setup</li> <li>Product Information</li> </ol>	.7 .8 .8 .9 .9
<ul> <li>4. Product Information and Test Setup</li> <li>4.1 Product Information</li> </ul>	.8 .8 .9 .9
4.1 Product Information	.8 .9 .9
	.9 .9
	.9
4.2 Test Setup Configuration	
4.3 Support Equipment	10
4.4 Channel List1	-
4.5 Test Mode1	
4.6 Table Of Parameters Of Text Software Setting1	11
5. Test Facility and Test Instrument Used1	12
5.1 Test Facility1	
5.2 Test Instrument Used1	12
6. Conducted Emissions1	
6.1 Block Diagram Of Test Setup1	
6.2 Limit1	
6.3 Test procedure1	
6.4 EUT operating Conditions1	
6.5 Test Result1	
7. Radiated Emissions1	
7.1 Block Diagram Of Test Setup1	
7.2 Limit	
7.3 Test procedure	
7.4 EUT Operating Conditions	20
7.5 Test Result	
8. Radiated Band Emission Measurement and Restricted Bands Of Operation2	
8.1 Block Diagram Of Test Setup	
8.2 Limit	
8.3 Test procedure	
<ul> <li>8.4 EUT Operating Conditions</li></ul>	20 20
<ul> <li>9. Power Spectral Density Test</li></ul>	21 24
9.1 Block Diagram Of Test Setup	)   21
9.2 Limit	। ⊋1
9.4 EUT Operating Conditions	21
9.2 Limit	22. 22.
10. Bandwidth Test	20
10.1 Block Diagram Of Test Setup	30
10. Bandwidth Test.       3         10.1 Block Diagram Of Test Setup.       3         10.2 Limit       3         10.3 Test procedure       3         10.4 EUT Operating Conditions       3	20
10.2 Emili 10.3 Test procedure	30
10.4 EUT Operating Conditions	39
10.5 Test Result	40
10.5       Test Result	47.



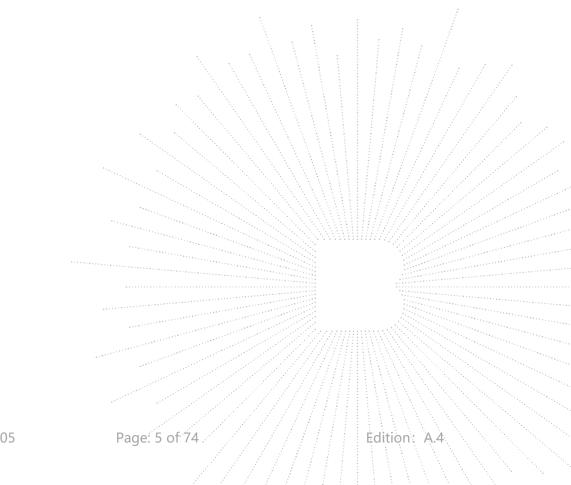
11.1 Block Diagram Of Test Setup	
11.2 Limit	47
11.3 Test Procedure	47
11.4 EUT Operating Conditions	47
11.5 Test Result	
12. 100 kHz Bandwidth Of Frequency Band Edge	
12.1 Block Diagram Of Test Setup	
12.2 Limit	
12.3 Test Procedure	
12.4 EUT Operating Conditions	
12.5 Test Result	50
13. Duty Cycle Of Test Signal	70
13.1 Standard Requirement	70
13.2 Formula	70
13.3 Test Procedure	70
13.4 Test Result	
14. Antenna Requirement	71
14.1 Limit	71
14.2 Test Result	71
15. EUT Test Setup Photographs	72

Page: 4 of 74



# 1. Version

Report No.	Issue Date	Description	Approved
BCTC2209980467E	2022-11-23	Original	Valid



No.: BCTC/RF-EMC-005





# 2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No.	Results
1	Conducted Emission	15.207	PASS
2	6dB Bandwidth	15.247 (a)(2)	PASS
3	Peak Output Power	15.247 (b)	PASS
4	Radiated Spurious Emission	15.247 (d)	PASS
5	Power Spectral Density	15.247 (e)	PASS
6	Restricted Band of Operation	15.205	PASS
7	Band Edge (Out of Band Emissions)	15.247 (d)	PASS
8	Antenna Requirement	15.203	PASS



# 3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(9KHz-30MHz)	U=3.7dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission (150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59°C

Page: 7 of 74



# 4. Product Information and Test Setup

# 4.1 Product Information

Model/Type Ref.	G2
Model differences:	N/A
Hardware Version:	N/A
Software Version:	N/A
IEEE 802.11 WLAN Mode Supported	⊠802.11b ⊠802.11g ⊠802.11n(20MHz channel bandwidth) ⊠802.11n(40MHz channel bandwidth)
Operation Frequency:	802.11b/g /n(HT20) MHz:2412~2462 MHz 802.11n(HT40) MHz:2422~2452 MHz
Type of Modulation:	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n(HT20/HT40);
Number Of Channel:	11 channels for 802.11b/g n(HT20); 7 Channels for 802.11n(HT40);
Transmit Power Max	16.48 dBm
Antenna installation:	External antenna
Antenna Gain:	3.79dBi
Power supply:	DC 12V/2A for adapter POE 51V/0.5A power supply

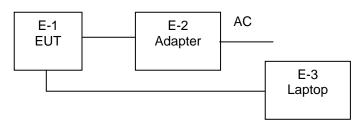
Page: 8 of 74



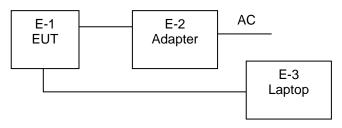
### 4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Conducted Emission:



**Radiated Spurious Emission** 



# 4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	AoA Gateway	MINEW	G2	N/A	EUT
E-2	Adapter	Gongjin	S24B72-120A200-C4	N/A	N/A
E-3	Laptop	Lenovo	ThinkPad E550C	SL10H52814	N/A

ltem	Shielded Type	Ferrite Core	Length	Note
LAN line	N/A	N/A	1.5M	N/A

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



### 4.4 Channel List

Channel List for 802.11b/g/n(20)						
Channel Frequency (MHz) Channel Frequency (MHz) Frequency (MHz) (MHz) Channel (MHz)						
01	2412	02	2417	03	2422	
04	2427	05	2432	06	2437	
07	2442	08	2447	09	2452	
10	2457	11	2462			

Channel List for 802.11n(40)						
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
03	2422	04	2427	05	2432	
06	2437	07	2442	08	2447	
09	2452					

### 4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

For All Mode	Description	Modulation Type
Mode 1	CH 01	
Mode 2	CH 06	802.11b
Mode 3	CH 11	N $N$ $N$ $A$
Mode 4	CH 01	$\land \land $
Mode 5	CH 06	802.11g
Mode 6	CH 11	[N, N, N, N, N, N, M,
Mode 7	CH 01	(N N N N N H H H H H H H H Z Z Z)
Mode 8	CH 06	802.11n20
Mode 9	CH 11	NNNNN H $HHHHZZZ$
Mode 10	CH 03	SNNNNN H <i>H ( / / / / / / /</i> /
Mode 11	CH 06	802.11n40
Mode 12	CH 09	
Mode 13	Link mode (Conducted emis	sion and Radiated emission)
Notes:		

Notes:

1. The measurements are performed at the highest, middle, lowest available channels.

2. The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

3. According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup"

11Mbps for 802.11b,6Mbps for 802.11g,13Mbps for 802.11n 20, 54Mbps for 802.11 n40,



# 4.6 Table Of Parameters Of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

Test software Version	QDART						
Frequency	2412 MHz	2437 MHz	2462 MHz				
Parameters	DEF	DEF	DEF				
Frequency	2422MHz	2437MHz	2452MHz				
Parameters	DEF	DEF	DEF				



Page: 11 of 74



# 5. Test Facility and Test Instrument Used

### 5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards. FCC Test Firm Registration Number: 712850 IC Registered No.: 23583

### 5.2 Test Instrument Used

Conducted Emissions Test									
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.				
Receiver	R&S	ESR3	102075	May 24, 2022	May 23, 2023				
LISN	R&S	ENV216	101375	May 24, 2022	May 23, 2023				
Software	Frad	EZ-EMC	EMC-CON 3A1	/	١				
Attenuator	\	10dB DC-6GHz	1650	May 24, 2022	May 23, 2023				

RF Conducted Test								
Equipment	Manufacturer	Model# Serial#		Last Cal.	Next Cal.			
Power Metter	Keysight	E4419		May 24, 2022	May 23, 2023			
Power Sensor (AV)	Keysight	E9300A		May 24, 2022	May 23, 2023			
Signal Analyzer20kH z-26.5GHz	Keysight	N9020A	MY49100060	May 24, 2022	May 23, 2023			
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	1999 - 1999 -	May 24, 2022	May 23, 2023			

No.: BCTC/RF-EMC-005

Page: 12 of 74

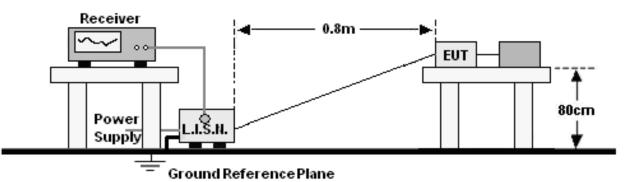


Radiated Emissions Test (966 Chamber)									
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.				
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023				
Receiver	R&S	ESR3	102075	May 24, 2022	May 23, 2023				
Receiver	R&S	ESRP	101154	May 24, 2022	May 23, 2023				
Amplifier	SKET	LAPA_01G18 G-45dB	١	May 24, 2022	May 23, 2023				
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 24, 2022	May 23, 2023				
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 26, 2022	May 25, 2023				
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 24, 2022	May 23, 2023				
Horn Antenn(18GH z-40GHz)	Schwarzbeck	BBHA9170	00822	May 24, 2022	May 23, 2023				
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 24, 2022	May 23, 2023				
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 26, 2022	May 25, 2023				
RF cables1(9kHz- 30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-000 8	May 26, 2022	May 25, 2023				
RF cables2(30MH z-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	May 26, 2022	May 25, 2023				
RF cables3(1GHz -40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	May 24, 2022	May 23, 2023				
Power Metter	Keysight	E4419		May 26, 2022	May 25, 2023				
Power Sensor (AV)	Keysight	E9300A	the second se	May 26, 2022	May 25, 2023				
Signal Analyzer20kH z-26.5GHz	Keysight	N9020A	MY49100060	May 26, 2022	May 25, 2023				
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	1997 - 19	May 26, 2022	May 25, 2023				
Software	Frad	EZ-EMC	FA-03A2 RE	$\boldsymbol{I}$	1				



# 6. Conducted Emissions

# 6.1 Block Diagram Of Test Setup



### 6.2 Limit

Limit (c	dBuV)
Quas-peak	Average
66 - 56 *	56 - 46 *
56.00	46.00
60.00	50.00
	Quas-peak 66 - 56 * 56.00

Notes:

1. \*Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

### 6.3 Test procedure

Setting
10 dB
0.15 MHz
30 MHz
9 kHz

a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

# 6.4 EUT operating Conditions

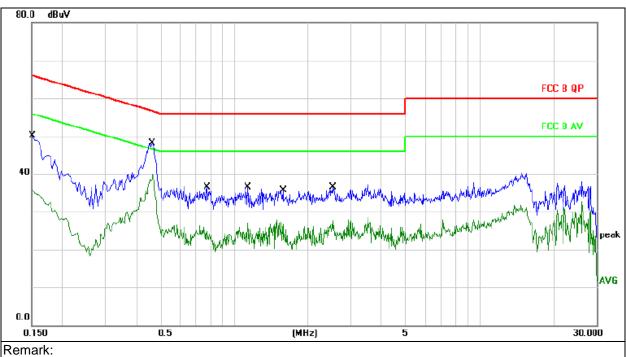
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

No.: BCTC/RF-EMC-005



# 6.5 Test Result

Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	L



1. All readings are Quasi-Peak and Average values.

2. Factor = Insertion Loss + Cable Loss.

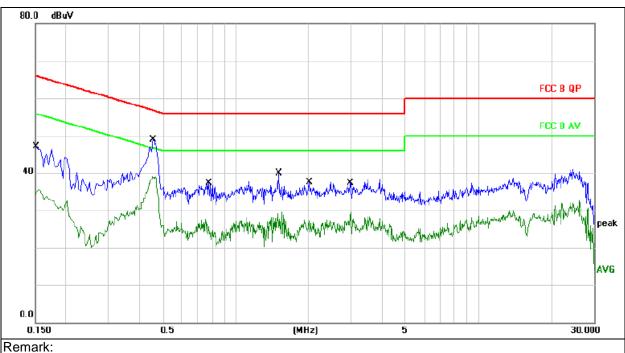
3. Measurement = Reading Level + Correct Factor

4. Over = Measurement - Limit

			Over	Limit	Measure- ment	Correct Factor	Reading Level	Freq.	. Mk.	No.
/	Comment	Detector	dB	dBuV	dBuV	dB	dBuV	MHz		
		QP	-15.85	65.99	50.14	9.96	40.18	0.1500		1
/		AVG	-19.99	55.99	36.00	9.96	26.04	0.1500		2
		QP	-8.48	56.66	48.18	10.10	38.08	0.4620		3
· ·		AVG	-6.84	46.66	39.82	10.10	29.72	0.4620	*	4
		QP	-19.51	56.00	36.49	10.14	26.35	0.7780		5
·		AVG	-19.66	46.00	26.34	10.14	16.20	0.7780		6
		QP	-19.45	56.00	36.55	10.12	26.43	1.1380		7
مر م		AVG	-19.12	46.00	26.88	10.12	16.76	1.1380		8
		QP	-20.28	56.00	35.72	10.18	25.54	1.5820		9
		AVG	-18.12	46.00	27.88	10.18	17.70	1.5820		10
		QP	-19.49	56.00	36.51	10.33	26.18	2.5180		11
		AVG	-18.23	46.00	27.77	10.33	17.44	2.5180		12



Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	Ν



All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.
 Measurement = Reading Level + Correct Factor
 Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	37.07	9.96	47.03	65.99	-18.96	QP	
2		0.1500	25.63	9.96	35.59	55.99	-20.40	AVG	
3		0.4580	38.84	10.09	48.93	56.73	-7.80	QP	
4	*	0.4580	29.06	10.09	39.15	46.73	-7.58	AVG	
5		0.7780	27.19	10.14	37.33	56.00	-18.67	QP	
6		0.7780	17.48	10.14	27.62	46.00	-18.38	AVG	
7		1.5060	29.69	10.17	39.86	56.00	-16.14	QP	
8		1.5060	19.42	10.17	29.59	46.00	-16.41	AVG	
9		2.0220	27.33	10.23	37.56	56.00	-18.44	QP	
10		2.0220	17.29	10.23	27.52	46.00	-18.48	AVG	
11		2.9739	26.97	10.42	37.39	56.00	-18.61	QP	
12		2.9739	19.05	10.42	29.47	46.00	-16.53	AVG	
12		2.0100	13.05	10.42	20.41	40.00	-10.00	7.0	

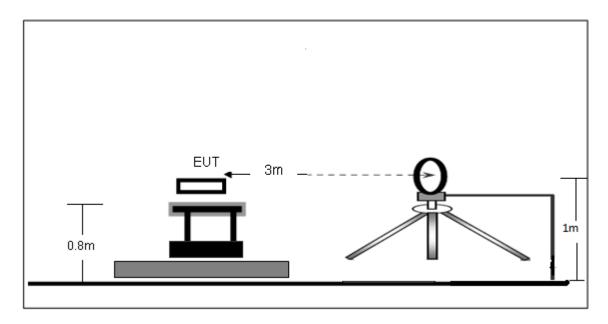
Page: 16 of 74



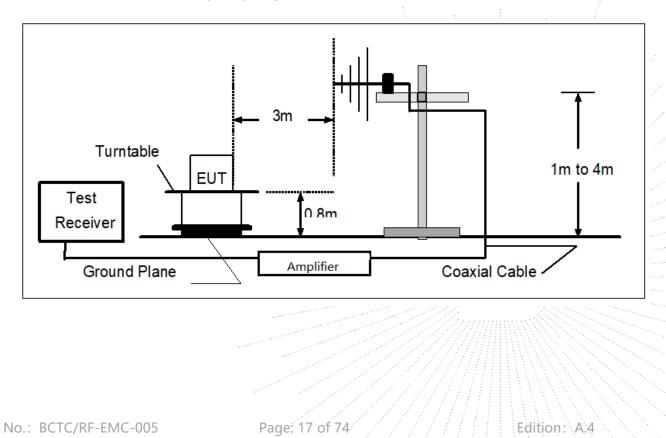
# 7. Radiated Emissions

# 7.1 Block Diagram Of Test Setup

# (A) Radiated Emission Test-Up Frequency Below 30MHz

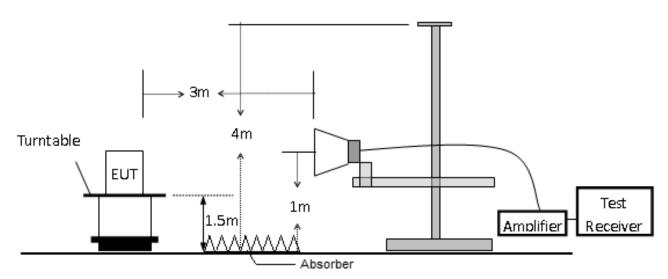


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





(C) Radiated Emission Test-Up Frequency Above 1GHz



### 7.2 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency	Field Strength	Distance	Field Strength Limit at 3m Distance				
(MHz)	uV/m	(m)	uV/m	dBuV/m			
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	20log <sup>(2400/F(kHz))</sup> + 80			
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	20log <sup>(24000/F(kHz))</sup> + 40			
1.705 ~ 30	30	30	100 * 30	20log <sup>(30)</sup> + 40			
30 ~ 88	100	3	100	20log <sup>(100)</sup>			
88 ~ 216	150	3	150	20log <sup>(150)</sup>			
216 ~ 960	200	3	200	20log <sup>(200)</sup>			
Above 960	500	3	500	20log <sup>(500)</sup>			

Limits Of Radiated Emission Measurement (Above 1000MHz)

Frequency (MHz)	Lim	it (dBuV/m) (at 3M)
	Peak	Average
Above 1000	74	54

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).



#### Frequency Range Of Radiated Measurement

(a) For an intentional radiator the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator operates at or above 95 GHz: To the third harmonic of the highest fundamental frequency or to 750 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(5) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a) (1)through (4) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this section, whichever is the higher frequency range of investigation.

# 7.3 Test procedure

Receiver Parameter	Setting
Attenuation	Auto
9kHz~150kHz	RBW 200Hz for QP
150kHz~30MHz	RBW 9kHz for QP
30MHz~1000MHz	RBW 120kHz for QP

Spectrum Parameter	Setting	
1-25GHz	RBW 1 MHz /VBW 1 MHz for Peak, RBW 1 MHz / VBW 10Hz for Average	

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:



a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middlest channel, the Highest channel. Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

# 7.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

### 7.5 Test Result

# Below 30MHz

Temperature:	<b>26</b> °C	Relative Humidity:	54%	
Pressure:	101KPa	Test Voltage :	AC120V/60Hz	2
Test Mode:	Mode 1	Polarization:	+	
				7

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
		and a second		PASS
			-	PASS

Note:

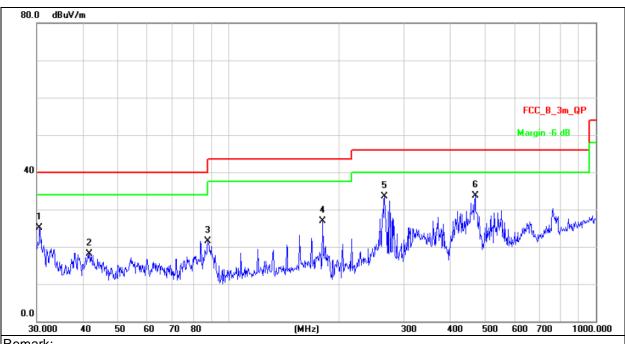
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB); Limit line = specific limits(dBuv) + distance extrapolation factor.



Between 30MHz - 1GHz

Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	Horizontal



Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

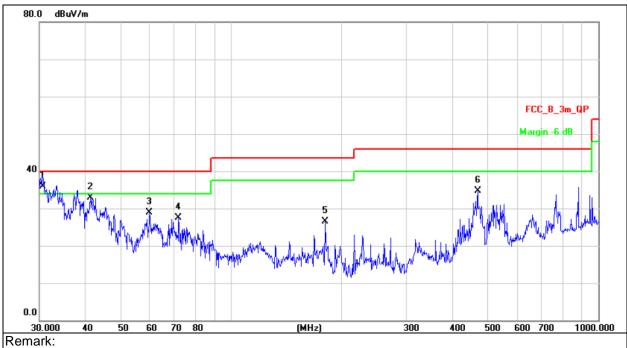
2. Measurement = Reading Level + Correct Factor

3.	Over	=	Measurement	-	Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		30.5306	34.04	-8.85	25.19	40.00	-14.81	QP
2		41.7129	26.58	-8.51	18.07	40.00	-21.93	QP
3		87.7248	33.17	-11.71	21.46	40.00	-18.54	QP
4		180.0165	35.05	-8.19	26.86	43.50	-16.64	QP
5	:	265.6757	40.73	-7.14	33.59	46.00	-12.41	QP
6	*	468.8762	35.75	-2.01	33.74	46.00	-12.26	QP



Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	Vertical



Factor = Antenna Factor + Cable Loss – Pre-amplifier.
 Measurement = Reading Level + Correct Factor
 Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	30.6179	44.67	-8.84	35.83	40.00	-4.17	QP
2		41.2765	41.42	-8.48	32.94	40.00	-7.06	QP
3		59.8588	38.56	-9.72	28.84	40.00	-11.16	QP
4		71.8320	38.48	-10.91	27.57	40.00	-12.43	QP
5		180.0165	34.66	-8.19	26.47	43.50	-17.03	QP
6		468.8762	36.77	-2.01	34.76	46.00	-11.24	QP



### Between 1GHz – 25GHz

### 802.11b

Polar	Frequency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	Туре
		Lo	w channel:2	412MHz			
V	4824.00	58.26	-0.43	57.83	74.00	-16.17	PK
V	4824.00	50.80	-0.43	50.37	54.00	-3.63	AV
V	7236.00	50.39	8.31	58.70	74.00	-15.30	PK
V	7236.00	40.21	8.31	48.52	54.00	-5.48	AV
Н	4824.00	59.29	-0.43	58.86	74.00	-15.14	PK
Н	4824.00	46.42	-0.43	45.99	54.00	-8.01	AV
Н	7236.00	49.93	8.31	58.24	74.00	-15.76	PK
Н	7236.00	36.37	8.31	44.68	54.00	-9.32	AV
		Mid	dle channel:	2437MHz			
V	4874.00	64.02	-0.38	63.64	74.00	-10.36	PK
V	4874.00	50.58	-0.38	50.20	54.00	-3.80	AV
V	7311.00	46.89	8.83	55.72	74.00	-18.28	PK
V	7311.00	37.52	8.83	46.35	54.00	-7.65	AV
Н	4874.00	61.08	-0.38	60.70	74.00	-13.30	PK
Н	4874.00	49.06	-0.38	48.68	54.00	-5.32	AV
Н	7311.00	49.29	8.83	58.12	74.00	-15.88	PK
Н	7311.00	40.84	8.83	49.67	54.00	-4.33	AV
		Hi	gh channel:2	462MHz			
V	4924.00	64.93	-0.32	64.61	74.00	-9.39	PK
V	4924.00	48.92	-0.32	48.60	54.00	-5.40	AV
V	7386.00	50.89	9.35	60.24	74.00	-13.76	PK
V	7386.00	36.98	9.35	46.33	54.00	-7.67	AV
Н	4924.00	65.48	-0.32	65.16	74.00	-8.84	PK
Н	4924.00	48.26	-0.32	47.94	54.00	-6.06	AV
Н	7386.00	47.23	9.35	56.58	74.00	-17.42	PK
Н	7386.00	38.83	9.35	48.18	54.00	-5.82	AV

### Remark:

1.Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Emission Level - Limit

In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
 The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



			802.11g	I	1	02200	
Polar	Frequency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	Туре
		Lo	w channel:2	412MHz			
V	4824.00	61.11	-0.43	60.68	74.00	-13.32	PK
V	4824.00	50.76	-0.43	50.33	54.00	-3.67	AV
V	7236.00	48.76	8.31	57.07	74.00	-16.93	PK
V	7236.00	40.66	8.31	48.97	54.00	-5.03	AV
Н	4824.00	58.27	-0.43	57.84	74.00	-16.16	PK
Н	4824.00	48.18	-0.43	47.75	54.00	-6.25	AV
Н	7236.00	50.81	8.31	59.12	74.00	-14.88	PK
Н	7236.00	39.05	8.31	47.36	54.00	-6.64	AV
		Mid	dle channel:	2437MHz			
V	4874.00	63.01	-0.38	62.63	74.00	-11.37	PK
V	4874.00	50.30	-0.38	49.92	54.00	-4.08	AV
V	7311.00	49.18	8.83	58.01	74.00	-15.99	PK
V	7311.00	37.55	8.83	46.38	54.00	-7.62	AV
Н	4874.00	62.78	-0.38	62.40	74.00	-11.60	PK
Н	4874.00	47.75	-0.38	47.37	54.00	-6.63	AV
Н	7311.00	49.31	8.83	58.14	74.00	-15.86	PK
Н	7311.00	37.59	8.83	46.42	54.00	-7.58	AV
		Hiç	gh channel:2	462MHz			
V	4924.00	59.23	-0.32	58.91	74.00	-15.09	PK
V	4924.00	48.04	-0.32	47.72	54.00	-6.28	AV
V	7386.00	50.33	9.35	59.68	74.00	-14.32	PK
V	7386.00	40.09	9.35	49.44	54.00	-4.56	AV
Н	4924.00	65.12	-0.32	64.80	74.00	-9.20	PK
Н	4924.00	49.62	-0.32	49.30	54.00	-4.70	AV
Н	7386.00	49.54	9.35	58.89	74.00	-15.11	PK
Н	7386.00	37.06	9.35	46.41	54.00	-7.59	AV

### Remark:

1.Emission Level = Meter Reading + Factor,

Factor = Antenna Factor + Cable Loss - Pre-amplifier.

Over= Emission Level - Limit

In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
 The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



Polar	Frequency	Reading Level			Limits	Over	Detector		
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	Туре		
Low channel:2412MHz									
V	4824.00	58.16	-0.43	57.73	74.00	-16.27	PK		
V	4824.00	50.46	-0.43	50.03	54.00	-3.97	AV		
V	7236.00	48.12	8.31	56.43	74.00	-17.57	PK		
V	7236.00	40.20	8.31	48.51	54.00	-5.49	AV		
Н	4824.00	59.08	-0.43	58.65	74.00	-15.35	PK		
Н	4824.00	48.98	-0.43	48.55	54.00	-5.45	AV		
Н	7236.00	50.25	8.31	58.56	74.00	-15.44	PK		
Н	7236.00	37.44	8.31	45.75	54.00	-8.25	AV		
		Mid	dle channel:	2437MHz					
V	4874.00	61.85	-0.38	61.47	74.00	-12.53	PK		
V	4874.00	47.59	-0.38	47.21	54.00	-6.79	AV		
V	7311.00	48.85	8.83	57.68	74.00	-16.32	PK		
V	7311.00	37.01	8.83	45.84	54.00	-8.16	AV		
Н	4874.00	64.90	-0.38	64.52	74.00	-9.48	PK		
Н	4874.00	50.63	-0.38	50.25	54.00	-3.75	AV		
Н	7311.00	46.52	8.83	55.35	74.00	-18.65	PK		
Н	7311.00	36.68	8.83	45.51	54.00	-8.49	AV		
		Hiç	gh channel:24	462MHz					
V	4924.00	61.19	-0.32	60.87	74.00	-13.13	PK		
V	4924.00	49.91	-0.32	49.59	54.00	-4.41	AV		
V	7386.00	50.58	9.35	59.93	74.00	-14.07	PK		
V	7386.00	39.49	9.35	48.84	54.00	-5.16	AV		
Н	4924.00	59.97	-0.32	59.65	74.00	-14.35	PK		
Н	4924.00	50.34	-0.32	50.02	54.00	-3.98	AV		
Н	7386.00	48.62	9.35	57.97	74.00	-16.03	PK		
Н	7386.00	36.79	9.35	46.14	54.00	-7.86	AV		

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### Remark:

1.Emission Level = Meter Reading + Factor,

Factor = Antenna Factor + Cable Loss - Pre-amplifier.

Over= Emission Level - Limit

In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
 The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



			802.11n4	0	•		
Polar	Frequency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	Туре
		Lo	w channel:2	422MHz			
V	4844.00	62.72	-0.43	62.29	74.00	-11.71	PK
V	4844.00	50.82	-0.43	50.39	54.00	-3.61	AV
V	7266.00	48.73	8.31	57.04	74.00	-16.96	PK
V	7266.00	40.66	8.31	48.97	54.00	-5.03	AV
Н	4844.00	65.48	-0.43	65.05	74.00	-8.95	PK
Н	4844.00	46.78	-0.43	46.35	54.00	-7.65	AV
Н	7266.00	50.88	8.31	59.19	74.00	-14.81	PK
Н	7266.00	36.07	8.31	44.38	54.00	-9.62	AV
		Mid	dle channel:	2437MHz			
V	4874.00	65.17	-0.38	64.79	74.00	-9.21	PK
V	4874.00	46.47	-0.38	46.09	54.00	-7.91	AV
V	7311.00	50.48	8.83	59.31	74.00	-14.69	PK
V	7311.00	36.47	8.83	45.30	54.00	-8.70	AV
Н	4874.00	59.68	-0.38	59.30	74.00	-14.70	PK
Н	4874.00	50.92	-0.38	50.54	54.00	-3.46	AV
Н	7311.00	48.97	8.83	57.80	74.00	-16.20	PK
Н	7311.00	40.14	8.83	48.97	54.00	-5.03	AV
		Hiç	gh channel:2	452MHz			
V	4904.00	65.79	-0.32	65.47	74.00	-8.53	PK
V	4904.00	50.72	-0.32	50.40	54.00	-3.60	AV
V	7356.00	49.96	9.35	59.31	74.00	-14.69	PK
V	7356.00	36.68	9.35	46.03	54.00	-7.97	AV
Н	4904.00	64.58	-0.32	64.26	74.00	-9.74	PK
Н	4904.00	46.98	-0.32	46.66	54.00	-7.34	AV
Н	7356.00	49.96	9.35	59.31	74.00	-14.69	PK
Н	7356.00	37.94	9.35	47.29	54.00	-6.71	AV

### Remark:

1.Emission Level = Meter Reading + Factor,

Factor = Antenna Factor + Cable Loss - Pre-amplifier.

Over= Emission Level - Limit

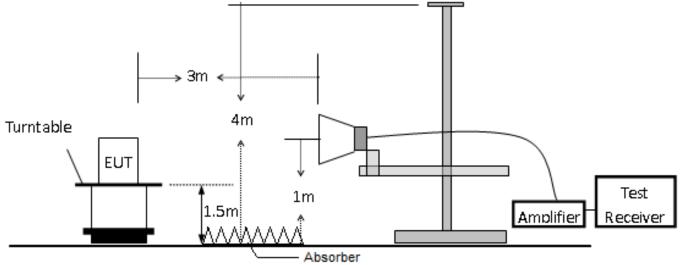
In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
 The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



# 8. Radiated Band Emission Measurement and Restricted Bands Of Operation

# 8.1 Block Diagram Of Test Setup

Radiated Emission Test-Up Frequency Above 1GHz



### 8.2 Limit

FCC Part15 C Section 15.209 and 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

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No.: BCTC/RF-EMC-005

Page: 27 of 74



### Limits Of Radiated Emission Measurement (Above 1000MHz)

Frequency (MHz)	Limit (dBuV	/m) (at 3M)
	Peak	Average
Above 1000	74	54

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3)Emission level (dBuV/m)=20log Emission level (uV/m).

### 8.3 Test procedure

Receiver Parameter	Setting		
Attenuation	Auto		
Start Frequency	2300MHz		
Stop Frequency	2520		
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average		

Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d.For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middlest channel, the Highest channel. Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

# 8.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



# 8.5 Test Result

Test mode	Polar (H/V)	Frequency (MHz)	Reading Level	Correct Factor	Measure- ment (dBuV/m)	Lin (dBu		Result
mede	(	()	(dBuV/m)	(dB)	PK	РК	AV	
-			Lov	w Channel 2	412MHz	I		
	Н	2390.00	52.15	-6.70	45.45	74.00	54.00	PASS
	Н	2400.00	57.91	-6.71	51.20	74.00	54.00	PASS
	V	2390.00	50.49	-6.70	43.79	74.00	54.00	PASS
802.11b	V	2400.00	61.35	-6.71	54.64	74.00	54.00	PASS
002.110	High Channel 2462MHz							
	Н	2483.50	60.75	-6.79	53.96	74.00	54.00	PASS
	Н	2500.00	50.05	-6.81	43.24	74.00	54.00	PASS
	V	2483.50	60.29	-6.79	53.50	74.00	54.00	PASS
	V	2500.00	54.12	-6.81	47.31	74.00	54.00	PASS
	Low Channel 2412MHz							
	Н	2390.00	50.76	-6.70	44.06	74.00	54.00	PASS
	Н	2400.00	61.05	-6.71	54.34	74.00	54.00	PASS
	V	2390.00	53.75	-6.70	47.05	74.00	54.00	PASS
802.11g	V	2400.00	59.03	-6.71	52.32	74.00	54.00	PASS
002.11g	High Channel 2462MHz							
	Н	2483.50	58.31	-6.79	51.52	74.00	54.00	PASS
	Н	2500.00	55.40	-6.81	48.59	74.00	54.00	PASS
	V	2483.50	60.92	-6.79	54.13	74.00	54.00	PASS
	V	2500.00	56.25	-6.81	49.44	74.00	54.00	PASS
Remark:								

Remark:

1. Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Emission Level – Limit

2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB 4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



Test mode	Polar (H/V)	Frequency (MHz)	Reading Level	Correct Factor	Measure- ment (dBuV/m)	Limits (dBuV/m)		Result
	(1)	()	(dBuV/m)	BuV/m) (dB)	РК	РК	AV	
	Low Channel 2412MHz							
	Н	2390.00	54.07	-6.70	47.37	74.00	54.00	PASS
	Н	2400.00	55.74	-6.71	49.03	74.00	54.00	PASS
	V	2390.00	53.39	-6.70	46.69	74.00	54.00	PASS
802.11n20	V	2400.00	57.09	-6.71	50.38	74.00	54.00	PASS
ouz.111120	High Channel 2462MHz							
	Н	2483.50	58.09	-6.79	51.30	74.00	54.00	PASS
	Н	2500.00	51.08	-6.81	44.27	74.00	54.00	PASS
	V	2483.50	62.62	-6.79	55.83	74.00	54.00	PASS
	V	2500.00	50.39	-6.81	43.58	74.00	54.00	PASS
			Low	/ Channel 2	422MHz			
	Н	2390.00	52.29	-6.70	45.59	74.00	54.00	PASS
	Н	2400.00	60.29	-6.71	53.58	74.00	54.00	PASS
	V	2390.00	57.98	-6.70	51.28	74.00	54.00	PASS
802.11n40	V	2400.00	58.97	-6.71	52.26	74.00	54.00	PASS
002.111140	High Channel 2452MHz							
	Н	2483.50	55.50	-6.79	48.71	74.00	54.00	PASS
	Н	2500.00	52.36	-6.81	45.55	74.00	54.00	PASS
	V	2483.50	55.91	-6.79	49.12	74.00	54.00	PASS
	V	2500.00	50.10	-6.81	43.29	74.00	54.00	PASS

### Remark:

1. Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Over= Emission Level – Limit

2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB 4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Page: 30 of 74



### 9. Power Spectral Density Test

### 9.1 Block Diagram Of Test Setup



### 9.2 Limit

FCC Part15 (15.247) , Subpart C							
Section	Test Item	Limit	Frequency Range (MHz)	Result			
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS			

Limits Of Radiated Emission Measurement (Above 1000MHz)

### 9.3 Test procedure

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS bandwidth.
- 3. Set the RBW to: 3 kHz
- 4. Set the VBW  $\geq$  3 x RBW.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level within the RBW.

10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

# 9.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing. Note: Power Spectral Density(dBm)=Reading+Cable Loss

No.: BCTC/RF-EMC-005

Page: 31 of 74



# 9.5 Test Result

Temperature:	<b>26</b> °C	Relative Humidity:	54%	
Pressure:	101KPa	Test Voltage:	AC120V/60H	Z
Test Mode	Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
	2412 MHz	-5.34	8	PASS
TX b Mode	2437 MHz	-4.94	8	PASS
	2462 MHz	-4.73	8	PASS
	2412 MHz	-11.86	8	PASS
TX g Mode	2437 MHz	-11.55	8	PASS
	2462 MHz	-11.41	8	PASS
	2412 MHz	-12.59	8	PASS
TX n Mode(20M)	2437 MHz	-12.49	8	PASS
	2462 MHz	-12.82	8	PASS
	2422 MHz	-18.5	8	PASS
TX n Mode(40M)	2437 MHz	-17.47	8	PASS
	2452 MHz	-17.84	8	PASS

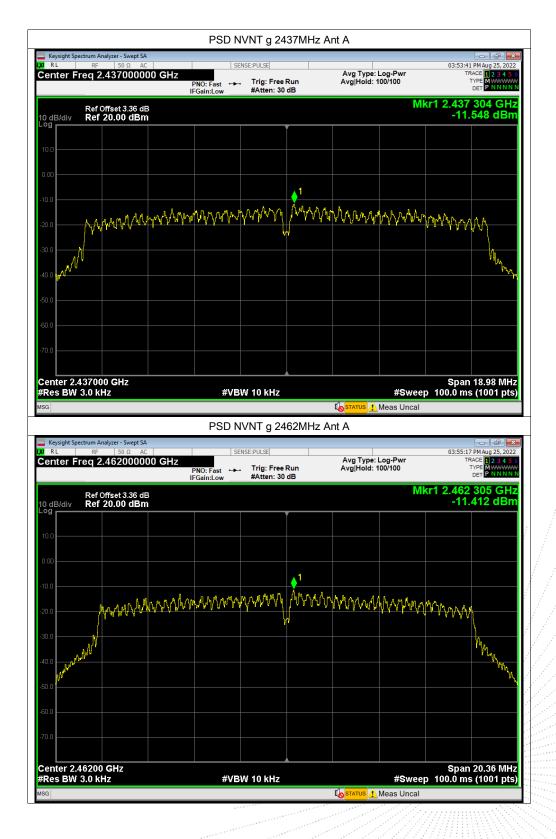




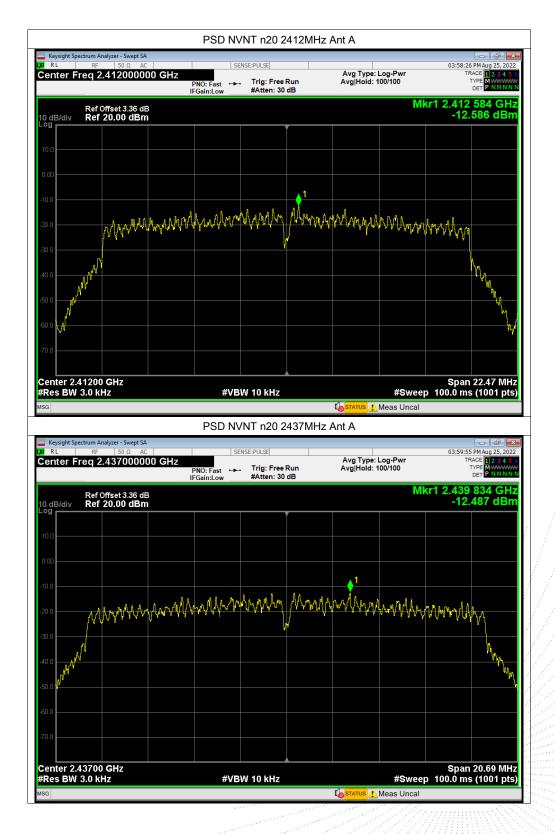




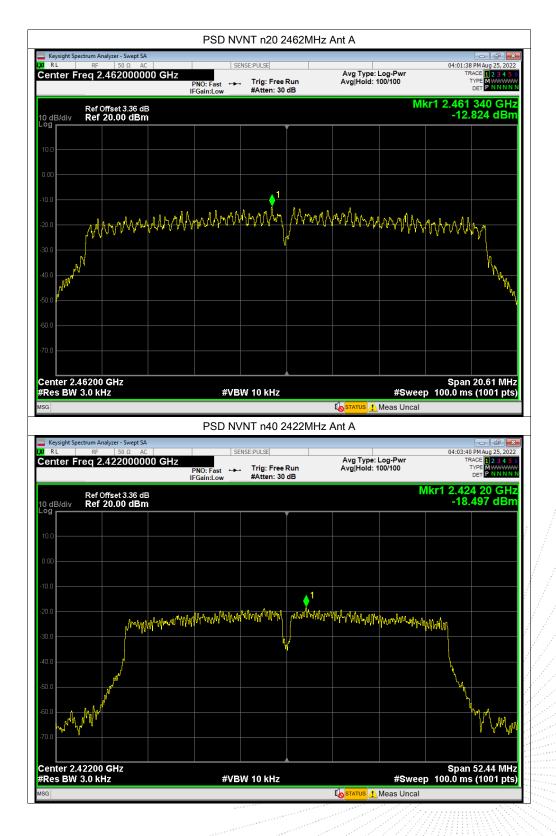


















# 10. Bandwidth Test

## 10.1 Block Diagram Of Test Setup



## 10.2 Limit

FCC Part15 (15.247) , Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(a)(2)	Bandwidth	>= 500KHz (-6dB bandwidth)	2400-2483.5	PASS	

## 10.3 Test procedure

- 1. Set RBW = 100 kHz.
- 2. Set the video bandwidth (VBW)  $\ge$  3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

## 10.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Note: Power Spectral Density(dBm)=Reading+Cable Loss



# 10.5 Test Result

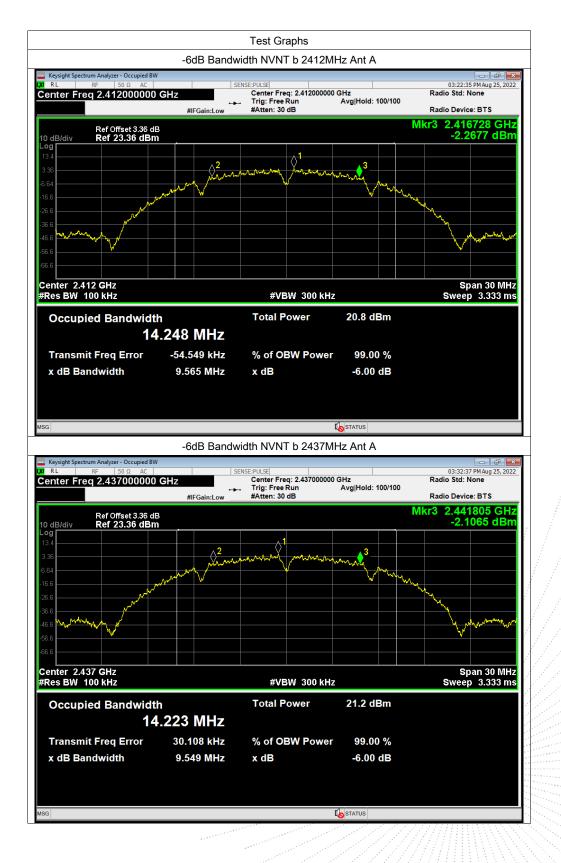
Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz

Test Mode	Frequency (MHz)	Frequency (MHz) -6dB bandwidth (MHz)		Result
	2412	9.565	500	Pass
TX b Mode	2437	9.549	500	Pass
	2462	10.015	500	Pass
	2412	13.758	500	Pass
TX g Mode	2437	12.653	500	Pass
	2462	13.575	500	Pass
	2412	14.983	500	Pass
TX n Mode(20M)	2437	13.792	500	Pass
	2462	13.740	500	Pass
	2422	34.961	500	Pass
TX n Mode(40M)	2437	34.996	500	Pass
	2452	35.057	500	Pass

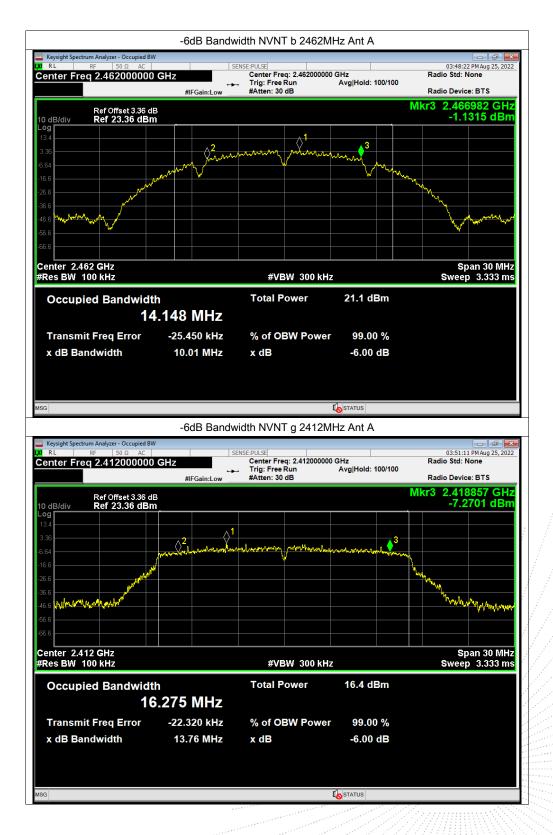
No.: BCTC/RF-EMC-005

Page: 40 of 74











	-6dB Bandw	vidth NVNT g 2437MI	Hz Ant A	
Keysight Spectrum Analyzer - Occupied BW           R L         RF         50 Ω         AC		ENSE:PULSE		03:52:49 PM Aug 25, 202
enter Freq 2.43700000		Center Freq: 2.437000000 Trig: Free Run	GHz Avg Hold: 100/100	Radio Std: None
	#IFGain:Low	#Atten: 30 dB		Radio Device: BTS
Ref Offset 3.36 dB				Mkr3 2.443326 GH
0 dB/div Ref 23.36 dBm				-5.0830 dBr
13.4		1		
3.36		monuntaria mananana	3	
5.64	warmon warman and and and and and and and and and a	when my man	and the send for the second	M
16.6				
26.6				Mun I
16.6 MANANA DWANNA				Www. hand and have and
56.6				- An addition
6.6				
Center 2.437 GHz Res BW 100 kHz		#VBW 300 kHz		Span 30 MH Sweep   3.333 m
Occupied Bandwidth		Total Power	16.8 dBm	
16	.275 MHz			
Transmit Freq Error	227 Hz	% of OBW Power	99.00 %	
x dB Bandwidth	12.65 MHz	x dB	-6.00 dB	
G			STATUS	
	-6dB Bandw	ا vidth NVNT g 2462MI	<b>-</b>	
Keysight Spectrum Analyzer - Occupied BW RL RF 50 Ω AC	S	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 202
SG Keysight Spectrum Analyzer - Occupied BW RL RF 50 Ω AC enter Freq 2.462000000	S	vidth NVNT g 2462MI	Hz Ant A	
Keysight Spectrum Analyzer - Occupied BW RL RF 50 Ω AC	S	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 20 Radio Std: None Radio Device: BTS
Reysight Spectrum Analyzer - Occupied BW RL RF 50 Q AC enter Freq 2.462000000 ( Ref Offset 3.36 dB	GHz #FGain:Low	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 20 Radio Std: None Radio Device: BTS Mkr3 2.468777 GH
Keysight Spectrum Analyzer - Occupied BW         RL       RF       50 Ω       AC         enter Freq 2.462000000 (         Ref Offset 3.36 dB         0 dB/div       Ref 23.36 dBm	GHz #FGain:Low	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 20 Radio Std: None Radio Device: BTS Mkr3 2.468777 GH
Reysight Spectrum Analyzer - Occupied BW RL RF 50 Q AC center Freq 2.462000000 ( Ref Offset 3.36 dB	GHz #FGain:Low	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 20 Radio Std: None Radio Device: BTS Mkr3 2.468777 GH
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Ω         AC           enter Freq 2.462000000         Ref Offset 3.36 dB           0 dB/div         Ref 23.36 dBm           0 g         3.4	GHZ #IFGain:Low →	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 20 Radio Std: None Radio Device: BTS Mkr3 2.468777 GH
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Ω         AC           senter Freq 2.462000000         Ref Offset 3.36 dB           O dB/div         Ref 23.36 dBm           0g         3.4         AC           3.36         AC         AC	GHz #FGain:Low	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 202 Radio Std: None Radio Device: BTS Mkr3 2.4687777 GH
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Q         AC           senter Freq 2.462000000         AC         AC         AC           Ref Offset 3.36 dB         AC         AC         AC           0         dB/div         Ref 23.36 dB         AC         AC           336         AC         AC         AC         AC           64         AC         AC         AC         AC	GHZ #IFGain:Low →	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 20 Radio Std: None Radio Device: BTS Mkr3 2.468777 GH
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Q         AC           senter Freq 2.462000000         AC         AC         AC           Ref Offset 3.36 dB         AC         AC         AC           0         dB/div         Ref 23.36 dB         AC         AC           3         AC         AC         AC         AC           4         AC         AC         AC         AC           5         AC         AC         AC         AC	GHZ #IFGain:Low →	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 202 Radio Std: None Radio Device: BTS Mkr3 2.4687777 GH
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Q         AC           senter Freq 2.462000000         AC         AC         AC           Ref Offset 3.36 dB         AC         AC         AC           0         dB/div         Ref 23.36 dB         AC         AC           336         AC         AC         AC         AC           64         AC         AC         AC         AC	GHZ #IFGain:Low →	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 202 Radio Std: None Radio Device: BTS Mkr3 2.4687777 GH
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Q         AC           senter Freq 2.462000000 (           Ref Offset 3.36 dB           0 dB/div         Ref 23.36 dBm           0 g           3 4           6 6           6 6           6 6           6 6           6 6           6 6           6 6	GHZ #IFGain:Low →	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 202 Radio Std: None Radio Device: BTS Mkr3 2.4687777 GH
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Ω         AC           senter Freq 2.462000000         Ref Offset 3.36 dB           O dB/div         Ref 23.36 dBm           99         3.4	GHZ #IFGain:Low →	vidth NVNT g 2462MI	Hz Ant A	
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Ω         AC           center Freq 2.462000000 (         AC         AC         AC           Ref Offset 3.36 dB         AC         AC         AC           O dB/div         Ref Offset 3.36 dB         AC         AC           3.3         AC         AC         AC         AC           6         AC         AC         AC         AC           AC         AC         AC <t< td=""><td>GHZ #IFGain:Low →</td><td>vidth NVNT g 2462MI</td><td>Hz Ant A</td><td>03:54:19 PMAug 25, 20: Radio Std: None Radio Device: BTS Mkr3 2.468777 GH -8.1672 dBr</td></t<>	GHZ #IFGain:Low →	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PMAug 25, 20: Radio Std: None Radio Device: BTS Mkr3 2.468777 GH -8.1672 dBr
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Q         AC           senter Freq 2.462000000 f           Ref Offset 3.36 dB           0 dB/div         Ref 23.36 dBm           336           64           66           66           66           66           66           66	GHZ #IFGain:Low →	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PM Aug 25, 202 Radio Std: None Radio Device: BTS Mkr3 2.4687777 GH
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Q         AC           senter Freq 2.462000000         Ref Offset 3.36 dB         Ref Offset 3.36 dB         Ref Offset 3.36 dB           0 dB/div         Ref 23.36 dB         Ref 0 ffset 3.36 d	GHz → #IFGain:Low	vidth NVNT g 2462MI	Hz Ant A	03:54:19 PMAug 25, 20: Radio Std: None Radio Device: BTS Mkr3 2.468777 GH -8.1672 dBr
Ref Offset 3.36 dB Ref Offset 3.36 dB Ref Offset 3.36 dB 0 dB/div Ref 23.36 dBm 9 34 35 56 66 66 67 66 66 67 66 66 67 67 68 66 60 67 67 68 60 60 60 60 60 60 60 60 60 60 60 60 60	GHz → #IFGain:Low	ridth NVNT g 2462MI	Hz Ant A GHz Avg Hold: 100/100	03:54:19 PMAug 25, 20: Radio Std: None Radio Device: BTS Mkr3 2.468777 GH -8.1672 dBr
Reysight Spectrum Analyzer - Occupied BW RL RF 50 Ω AC Center Freq 2.462000000 0 Ref Offset 3.36 dB Ref 23.36 dBm Ref 23	GHz #IFGain:Low →	ridth NVNT g 2462MI	Hz Ant A GHz Avg Hold: 100/100	03:54:19 PMAug 25, 20: Radio Std: None Radio Device: BTS Mkr3 2.468777 GH -8.1672 dBr
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Ω         AC           Genter Freq 2.462000000 (         Ref Offset 3.36 dB         Genter State	GHz → S #IFGain:Low →	vidth NVNT g 2462MI ENSE:PULSE Center Freq: 2.46200000 Trig: Free Run #Atten: 30 dB	Hz Ant A GHz Avg Hold: 100/100	03:54:19 PMAug 25, 20: Radio Std: None Radio Device: BTS Mkr3 2.468777 GH -8.1672 dBr
Reysight Spectrum Analyzer - Occupied BW RL RF 50 Ω AC Center Freq 2.462000000 0 Ref Offset 3.36 dB Ref 23.36 dBm Ref 23	GHz #IFGain:Low →	ridth NVNT g 2462MI	Hz Ant A GHz Avg Hold: 100/100	03:54:19 PMAug 25, 20: Radio Std: None Radio Device: BTS Mkr3 2.468777 GH -8.1672 dBr
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Ω         AC           enter Freq 2.462000000 0         Ref Offset 3.36 dB         BB           0 dB/div         Ref Offset 3.36 dB         Control of the set of the	GHz → S #IFGain:Low →	vidth NVNT g 2462MI ENSE:PULSE Center Freq: 2.46200000 Trig: Free Run #Atten: 30 dB	Hz Ant A GHz Avg Hold: 100/100	03:54:19 PMAug 25, 20: Radio Std: None Radio Device: BTS Mkr3 2.468777 GH -8.1672 dBr



		dth NVNT n20 2412M	IHz Ant A	
Keysight Spectrum Analyzer - Occupied BV R L RF 50 Ω AC		ENSE:PULSE		03:57:26 PM Aug 25, 202
enter Freq 2.41200000		Center Freq: 2.412000000 ( Trig: Free Run	GHz Avg Hold: 100/100	Radio Std: None
	↔ #IFGain:Low	#Atten: 30 dB		Radio Device: BTS
Ref Offset 3.36 di	В			Mkr3 2.419483 GH
0 dB/div Ref 23.36 dBn				-6.3923 dBr
13.4				
3.36	<b>2</b>			
5.64	www.hundowedowedowedowedowedowedowedowedowedowe	manun	montermanter	M
26.6				
36.6				Mr. March
16.6 Ward also Man Man				Man Mandal
				· · · · · · · · · · · · · · · · · · ·
66.6				
Center 2.412 GHz				Span 30 MH
Res BW 100 kHz		#VBW 300 kHz		Sweep 3.333 m
Occupied Bandwidt		Total Power	14.7 dBm	
17	7.468 MHz			
Transmit Freq Error	-8.353 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	14.98 MHz	x dB	-6.00 dB	
G		L. L.	STATUS	
	-6dB Bandwi	dth NVNT n20 2437M	1Hz Ant A	
Keysight Spectrum Analyzer - Occupied BV R L RF 50 Ω AC		ENSE:PULSE		03:59:05 PM Aug 25, 202
enter Freq 2.43700000		Center Freq: 2.437000000 (	GHz Avg Hold: 100/100	Radio Std: None
	#IFGain:Low	#Atten: 30 dB		Radio Device: BTS
Ref Offset 3.36 dl	В			Mkr3 2.4439 GH
0 dB/div Ref 23.36 dBn	<u>n</u>			-8.7255 dBr
3.4				
3.36	<u>2</u>		3	
5.64 ····································	montantantana	man and the second s	When work and when when	M
16.6				
				- The -
36.6				W WWWWWWWWW
36.6				W W W W
26.6 16.6 56.6 56.6				
26.6 6.6 6.6 6.6 6.6 6.6 6 6 6 6 6 6 6 6				
16.6 mm 14.6 m		#VBW 300 kHz		Span 30 MH Sweep 3.333 m
2666 2666 2666 2001 2011	h	#VBW 300 kHz Total Power	15.3 dBm	
Center 2.437 GHz Res BW 100 kHz	<sup>h</sup> 7.456 MHz		15.3 dBm	
Center 2.437 GHz Res BW 100 kHz Occupied Bandwidt	7.456 MHz	Total Power		
Center 2.437 GHz Res BW 100 kHz Occupied Bandwidt 17 Transmit Freq Error	7 <b>.456 MHz</b> 3.884 kHz	Total Power % of OBW Power	99.00 %	
Center 2.437 GHz Res BW 100 kHz Occupied Bandwidt	7.456 MHz	Total Power		
Center 2.437 GHz Res BW 100 kHz Occupied Bandwidt 17 Transmit Freq Error	7 <b>.456 MHz</b> 3.884 kHz	Total Power % of OBW Power	99.00 %	
Cocupied Bandwidt	7 <b>.456 MHz</b> 3.884 kHz	Total Power % of OBW Power	99.00 %	



		dth NVNT n20 2462	MHz Ant A	
Keysight Spectrum Analyzer - Occupied BW           R L         RF         50 Ω         AC		ENSE:PULSE		04:00:38 PM Aug 25, 20
enter Freq 2.462000000		Center Freq: 2.462000000 Trig: Free Run	GHz Avg Hold: 100/100	Radio Std: None
	↔ #IFGain:Low	#Atten: 30 dB	Avginoid: 100/100	Radio Device: BTS
Ref Offset 3.36 dE				Mkr3 2.468866 GH
0 dB/div Ref 23.36 dBm				-9.5631 dBr
og 3.4				
3.36		∆ <sup>1</sup>		
.64	2 standar	interruption markender		
6.6	Wern and the state of the state		- Charles and the second from	~
6.6				here and the second sec
6.6				
a				h Anno hu
6.6				A . M. MANANA
6.6				
enter 2.462 GHz Res BW 100 kHz		#VBW 300 kHz		Span 30 MH Sweep   3.333 m
Occupied Bandwidt		Total Power	15.1 dBm	
17	7.462 MHz			
Transmit Freq Error	-4.347 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	13.74 MHz	x dB	-6.00 dB	
G			STATUS	
	-6dB Bandwi	dth NVNT n40 24221	MHz Ant A	
Keysight Spectrum Analyzer - Occupied BW				
RL RF 50 Ω AC enter Freg 2.422000000		ENSE:PULSE Center Freq: 2.422000000	GHz	04:02:42 PM Aug 25, 20 Radio Std: None
	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 100/100	Radio Device: BTS
				Mkr3 2.439501 GH
Ref Offset 3.36 dE dB/div Ref 23.36 dBm	B			-11.121 dBr
og				
3.4				
.36	2			• 3
.64	2 whenen when man and when the second	unitertain presidentialiste	helper man and and and and and and and and and a	
		$\bigvee$		
6.6				1. A.
6.6				
6.6				Mr. Marine
				A A A A A A A A A A A A A A A A A A A
0.0				
6.6				
enter 2.422 GHz				Span 60 MH
enter 2.422 GHz Res BW 100 kHz		#VBW 300 kHz		Span 60 MH Sweep 6 m
enter 2.422 GHz Res BW 100 kHz		#VBW 300 kHz Total Power	14.1 dBm	
enter 2.422 GHz Res BW 100 kHz Occupied Bandwidt				
enter 2.422 GHz Res BW 100 kHz Occupied Bandwidt 35	5.788 MHz	Total Power	14.1 dBm	
enter 2.422 GHz Res BW 100 kHz Occupied Bandwidt 35 Transmit Freq Error			14.1 dBm	
enter 2.422 GHz Res BW 100 kHz Occupied Bandwidt 35	5.788 MHz	Total Power	14.1 dBm	
enter 2.422 GHz Res BW 100 kHz Occupied Bandwidt 35 Transmit Freq Error	5.788 MHz 20.248 kHz	Total Power % of OBW Power	14.1 dBm 99.00 %	
enter 2.422 GHz Res BW 100 kHz Occupied Bandwidt 35 Transmit Freq Error	5.788 MHz 20.248 kHz	Total Power % of OBW Power	14.1 dBm 99.00 %	
enter 2.422 GHz Res BW 100 kHz Occupied Bandwidt 35 Transmit Freq Error	5.788 MHz 20.248 kHz	Total Power % of OBW Power x dB	14.1 dBm 99.00 %	



Keysight Spectrum Analyzer - Occupied BW				
RL RF 50 Ω AC enter Freq 2.437000000		ENSE:PULSE Center Freq: 2.437000000 Trig: Free Run #Atten: 30 dB	GHz Avg Hold: 100/100	04:04:16 PM Aug 25, 20 Radio Std: None Radio Device: BTS
		#Atten: 30 dB		Mkr3 2.454544 GH
Ref Offset 3.36 dB dB/div Ref 23.36 dBm				-13.187 dBr
<b>og</b> 3.4				
.36				2
5.6	havennegalowlownergodowner	termentantering presententiet	outroutenerselenvoutenetryn	win
5.6		¥		
5.6				10, 10, 10, 10, 10, 10, 10, 10, 10, 10,
5.6 million and a second se				Mr. Martine
5.6				
enter 2.437 GHz				Span 60 MH
Res BW 100 kHz		#VBW 300 kHz		Sweep 6 m
Occupied Bandwidth		Total Power	14.6 dBm	
35	.736 MHz			
Transmit Freq Error	46.138 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	35.00 MHz	x dB	-6.00 dB	
3			STATUS	
	-6dB Bandwi	dth NVNT n40 2452N	/IHz Ant A	
Keysight Spectrum Analyzer - Occupied BW           RL         RF         50 Ω         AC		ENSE:PULSE		04:05:57 PM Aug 25, 202
enter Freq 2.452000000	GHz	Center Freq: 2.452000000 Trig: Free Run	GHz Avg Hold: 100/100	Radio Std: None
	#IFGain:Low	#Atten: 30 dB		Radio Device: BTS
Ref Offset 3.36 dB dB/div Ref 23.36 dBm				Mkr3 2.469544 GH -10.899 dBr
<b>9</b> g				
36		<u>↓</u>		3
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5.6		Y		
5.6				
5.6				My My My Marine
5.6 <b></b>				
enter 2.452 GHz Res BW 100 kHz		#VBW 300 kHz		Span 60 MH Sweep 6 m
Occupied Bandwidth	1	Total Power	14.6 dBm	
	.714 MHz			
Transmit Freg Error	15.692 kHz	% of OBW Power	99.00 %	
•	35.06 MHz	x dB	-6.00 dB	
x dB Bandwidth				
x dB Bandwidth				
x dB Bandwidth				



# 11. Peak Output Power Test

# 11.1 Block Diagram Of Test Setup



## 11.2 Limit

FCC Part15 (15.247) , Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS	

# 11.3 Test Procedure

a. The EUT was directly connected to the Power meter

# 11.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing. Note: Power Spectral Density(dBm)=Reading+Cable Loss

No.: BCTC/RF-EMC-005

Page: 47 of 74



# 11.5 Test Result

Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz

Test Mode	Frequency(MHz)	Maximum Conducted Output Power(PK) (dBm)	Limit (dBm)
	2412	15.95	30
802.11b	2437	16.48	30
	2462	16.11	30
	2412	15.41	30
802.11g	2437	15.80	30
	2462	15.63	30
	2412	13.71	30
802.11n20	2437	14.36	30
	2462	14.13	30
	2422	12.74	30
802.11n40	2437	13.24	30
	2452	13.24	30

Page: 48 of 74



# 12. 100 kHz Bandwidth Of Frequency Band Edge

# 12.1 Block Diagram Of Test Setup



## 12.2 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

# 12.3 Test Procedure

Using the following spectrum analyzer setting:

- a) Set the RBW = 100KHz.
- b) Set the VBW = 300KHz.
- c) Sweep time = auto couple.
- d) Detector function = peak.
- e) Trace mode = max hold.
- f) Allow trace to fully stabilize..

# 12.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing. Note: Power Spectral Density(dBm)=Reading+Cable Loss

No.: BCTC/RF-EMC-005

Page: 49 of 74



# 12.5 Test Result













0 GHz PNO: Fa IFGain:L		Free Run en: 30 dB	Avg Type: Avg Hold: ′		03:54:23 PM Aug 2 TRACE 1 2 TYPE M W DET P N	25, 202
IFGain:L	.ow #Atte	en: 30 dB			DET	
				MI	(r1 2.465 75 ·	
				IVIT	-0.519 (	
			<b>∳</b> <sup>1</sup>			
milawahan	Anton May	when the second	Mr. Mary Character of	hanny		
				\		
				, mpul	м	
					hallen 1	
					and ke al Arab	n)pull
	#\/B\M 200			Swoon	Span 30.00	MH
	#VBVV 300	KH2	STATUS	Sweep	2.933 ms (100	ı pı
Band Edge	NVNT a :	2462MH	<u> </u>	ission		-
rana Eago						
	ast 🛶 Trig:	Free Run	Avg Type: Avg Hold: /	Log-Pwr  00/100	03:54:26 PM Aug 2 TRACE 1 2 TYPE MW DET P N	34
				Ν	kr1 2.463 3 ( 1.645 c	GH dBr
					DL1 -20	<u>0.52 d</u> E
why why why why		$\begin{pmatrix}4\\\\\end{pmatrix}^3$	. h . h d			
	and a final fraction of a first	a filologia di provinsi filologia di provinsi di provinsi di provinsi di provinsi di provinsi di provinsi di pr	and the second	ላየያሳ~~ <u>ብ</u> ዛ/ <sup>81</sup> -ሥረጉ/ሴቀሳ/ያኦ	hann flan hair an	nti (Janua)
	#\/B\M 200			Swoon	Stop 2.54700	
	Y		FUNCTION WIDTH	· · ·		τpu
2.463 3 GHz 2.483 5 GHz 2.500 0 GHz	-54.037 dBm			. 014		
	Band Edge	#VBW 300 #VBW 300 Band Edge NVNT g 2 Sense:PULSE 0 GHz PNO: Fast → Trig: IFGain:Low → Trig: IFGain:Low → Attended #Attended #VBW 300 2.463 3 GHz 1.645 dBm 2.483 3 GHz 1.645 dBm 2.483 3 GHz 1.645 dBm	#VBW 300 kHz #VBW 300 kHz Band Edge NVNT g 2462MH 0 GHz PN0: Fast → Trig: Free Run IFGain:Low Trig: Free Run #Atten: 30 dB #VBW 300 kHz #VBW 300 kHz #VBW 300 kHz	#VBW 300 KHz #VBW 300 KHz Band Edge NVNT g 2462MHz AntA Em SENSE:PULSE 0 GHz PNO: Fast PNO: F	#VBW 300 kHz Sweep	within the second sec

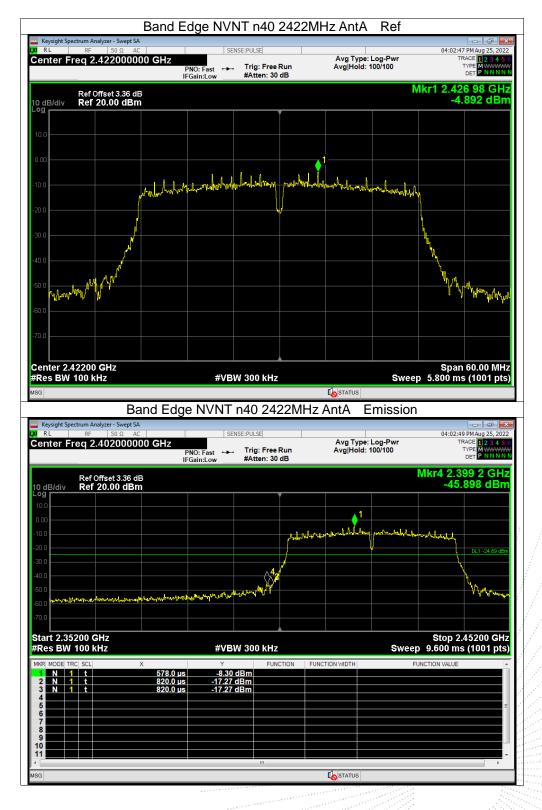






		ge NVNT ni	20 2462N	/Hz AntA	Ref	
Keysight Spectrum Analyzer - Swept RL RF 50 Ω Center Freq 2.462000	ac 000 GHz	SENSE:PULSE	Free Run	Avg Type: Avg Hold:	Log-Pwr	04:00:43 PM Aug 25, 2 TRACE 1 2 3 4 TYPE M
		):Fast ↔→ Trig: in:Low #Atte	n: 30 dB	Avginoid.		DET PNNN
Ref Offset 3.36 0 dB/div Ref 20.00 dB	dB m					Mkr1 2.463 26 GI -0.003 dB
10.0						
D.00			<b>∮</b> 1			
10.0	an all hours long	whenter	hay norther	Mudmin	mour langer	<b>N</b>
20.0			V			
0.0	h					Ma .
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0.0 Mangel Marine						WWWWWIL
0.0						
enter 2.46200 GHz Res BW 100 kHz		#VBW 300	kHz		Swe	Span 30.00 M ep 2.933 ms (1001 p
G						
E	and Edge	NVNT n20	2462MHz	z AntA E	missio	า
Keysight Spectrum Analyzer - Swept RL RF 50 Ω	AC	SENSE:PULSE				04:00:45 PM Aug 25, 2
enter Freq 2.497000	PNC	):Fast ↔ Trig: in:Low #Atte	Free Run n: 30 dB	Avg Type: Avg Hold:	Log-Pwr 100/100	TRACE 1 2 3 4 TYPE MWWW DET PNNN
Ref Offset 3.36 0 dB/div Ref 20.00 dE						Mkr4 2.487 0 GI -50.822 dB
10.0						
	Name.					
						DL1 -20.00 (
80.0	+ $+$ $+$					
40.0 50.0 10 10 10 10 10 10 10 10 10 10 10 10 10	marmore		3			
60.0		"Yom March appropriate	roman and rig Homewilling	undrewall from and	n of a second states	werthan were and the start with the second
70.0						
tart 2.44700 GHz Res BW 100 kHz		#VBW 300	kHz		Swee	Stop 2.54700 G p 9.600 ms (1001 p
IKR MODE TRC SCL	X	Y	FUNCTION FU	JNCTION WIDTH		FUNCTION VALUE
1         N         1         t           2         N         1         t           3         N         1         t           4	1.108 ms 1.386 ms 2.694 ms	0.71 dBm -7.36 dBm 2.40 dBm				
5						
8						
9 10						
			"			Þ
G				<b>I</b> STATUS		





Edition: A.4

Page: 56 of 74



		e NVNT n40 2452	2MHz AntA Ref	
Keysight Spectrum Analyzer - Sw XI RL RF 50 Ω	AC	SENSE:PULSE		04:06:02 PM Aug 25, 202
Center Freq 2.4520	DOOOO GHZ PNO: F IFGain:1		Avg Type: Log-Pwr Avg Hold: 100/100	TRACE 12345 TYPE MWWWW DET P NNNN
Ref Offset 3. 0 dB/div Ref 20.00	36 dB dBm		N	1kr1 2.456 98 GH -4.247 dBr
10.0				
0.00			1	
10.0	- Andere	where have been been been and the second	prover the property of the stand of the	
20.0	P. Milling Louise	<u> </u>	the second se	1
30.0	/			
40.0	<i>Х</i>			N.
50.0 Martin Mart My				Mr. Multimar
50.0				
70.0				
enter 2.45200 GHz				Span 60.00 MH
Res BW 100 kHz		#VBW 300 kHz	Swee	5.800 ms (1001 pt
	Band Edge N	VNT n40 2452M		
Keysight Spectrum Analyzer - Sw RL RF 50 ណ	ept SA	SENSE:PULSE		04:06:05 PM Aug 25, 202
enter Freq 2.4720		ast 🛶 Trig: Free Run	Avg Type: Log-Pwr Avg Hold: 100/100	TRACE 1 2 3 4 5 TYPE MWWW DET P NNN
Ref Offset 3. 0 dB/div Ref 20.00				Mkr4 2.492 0 GH -50.837 dBr
og 10.0 0.00	1			
10.0 <b>مىلىر</b>	when he when have make	whether have been and the		
30.0				DL1 -24.25 dE
40.0 50.0		- Vw	Muyuyu Alamana and A	การการ <sup>16</sup> พระอุโกรระได้ไปปี อา ( กล้าง การการการการได้ 1.2.2
70.0				
Start 2.42200 GHz Res BW 100 kHz		#VBW 300 kHz	Swee	Stop 2.52200 GH 9.600 ms (1001 pt
MKR MODE TRC SCL	X 152.0 up	Y FUNCTION	FUNCTION WIDTH FI	JNCTION VALUE
1 N 1 t 2 N 1 t 3 N 1 t	152.0 µs 160.0 µs 160.0 µs	-16.51 dBm -13.43 dBm -13.43 dBm		
4 5 6				
7 8				
9 10 11				
				L. L
sg			STATUS	

No.: BCTC/RF-EMC-005





Page: 58 of 74

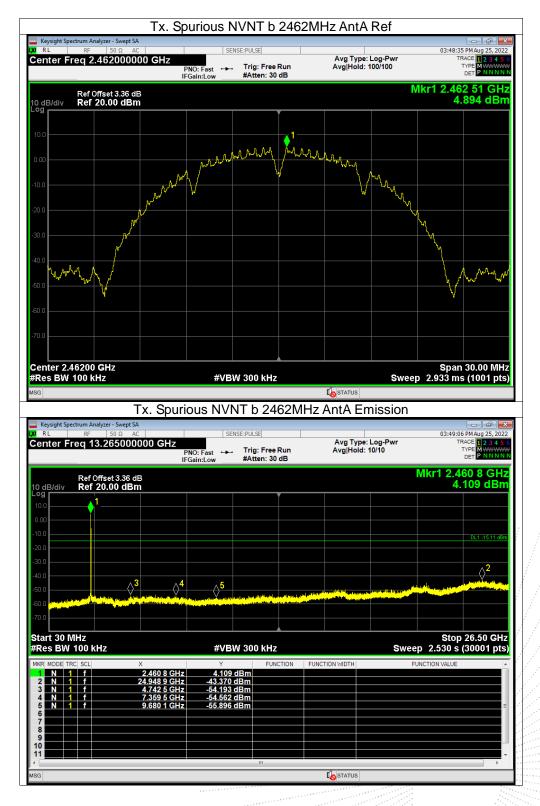




Edition: A.4

Page: 59 of 74





Edition: A.4

Page: 60 of 74





Edition: A.4

Page: 61 of 74

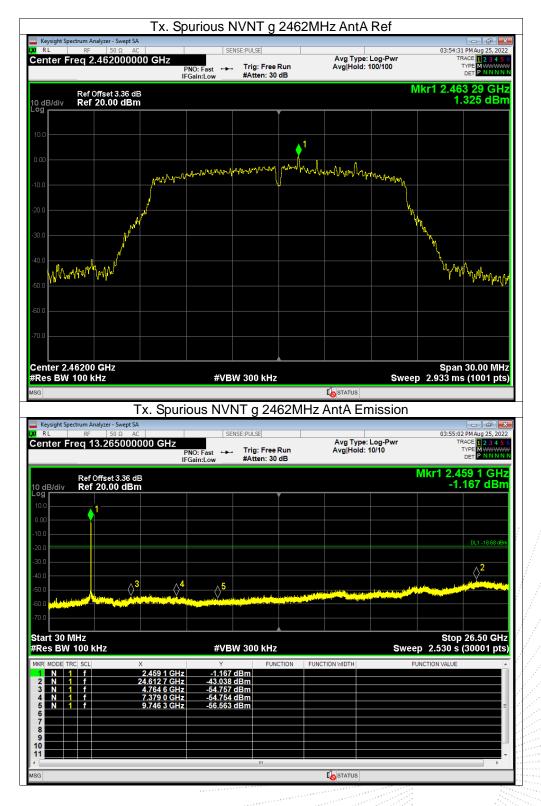




Edition: A.4

Page: 62 of 74





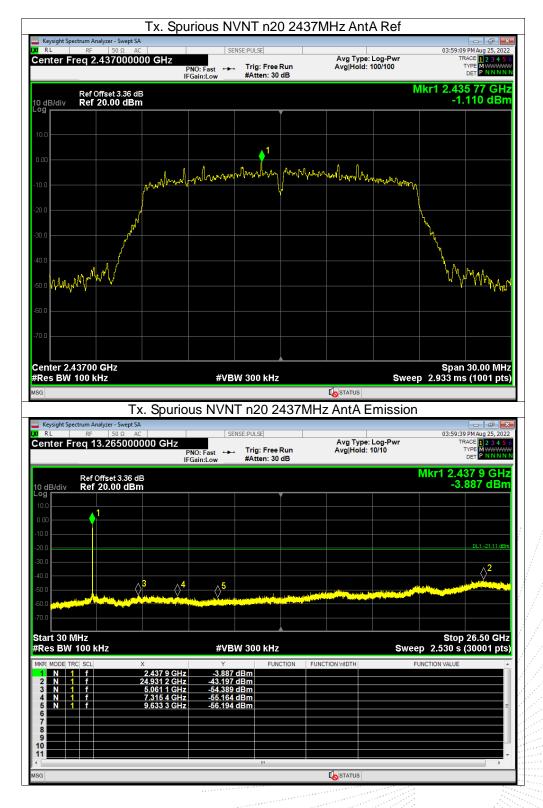
Edition: A.4

Page: 63 of 74

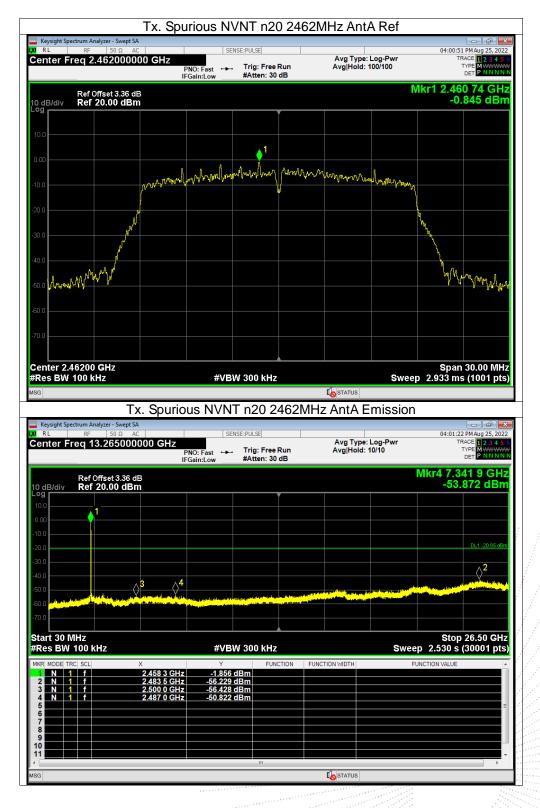








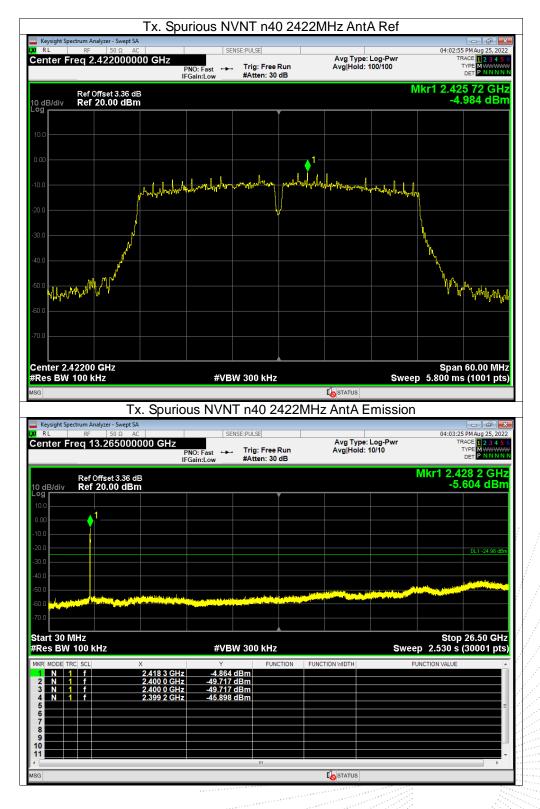




Edition: A.4

Page: 66 of 74

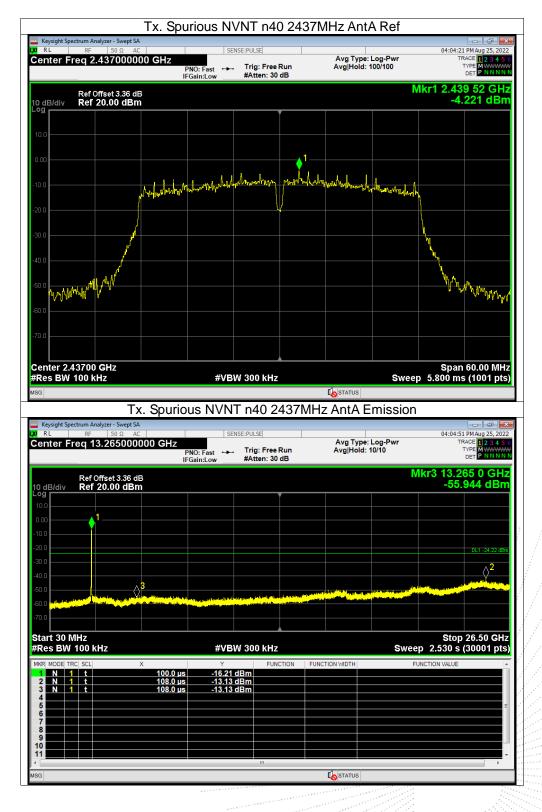




Edition: A.4

Page: 67 of 74

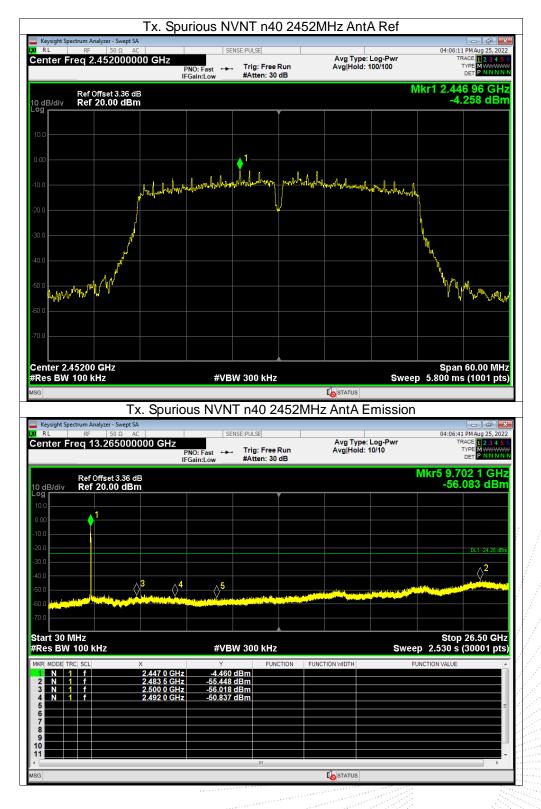




Edition: A.4

Page: 68 of 74







# 13. Duty Cycle Of Test Signal

# 13.1 Standard Requirement

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

## 13.2 Formula

Duty Cycle = Ton / (Ton+Toff)

#### 13.3 Test Procedure

- 1.Set span = Zero
- 2. RBW = 8MHz
- 3. VBW = 8MHz,
- 4. Detector = Peak

#### 13.4 Test Result

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	100	0	0
NVNT	b	2462	100	0	0
NVNT	g	2412	100	0	0
NVNT	g	2462	100	0	0
NVNT	n20	2412	100	0	0
NVNT	n20	2462	100	0	0
NVNT	n40	2422	100	0	0
NVNT	n40	2452	100	0	0



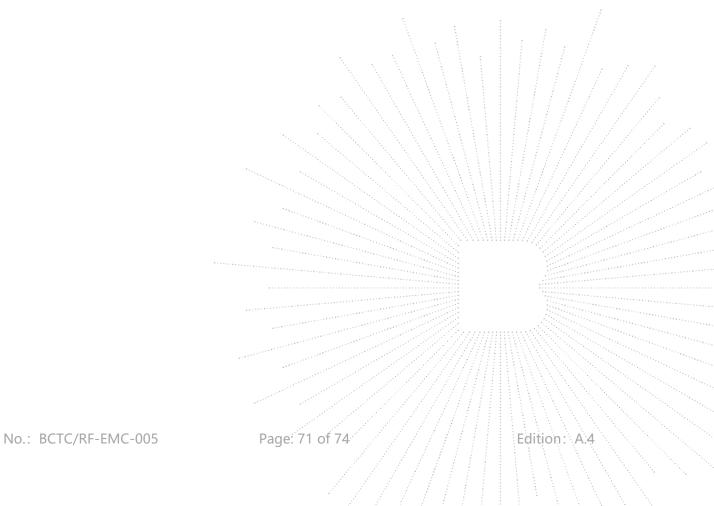
# 14. Antenna Requirement

#### 14.1 Limit

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

## 14.2 Test Result

The EUT antenna is External antenna; fulfill the requirement of this section.





# 15. EUT Test Setup Photographs

## Conducted emissions Photo



No.: BCTC/RF-EMC-005

Page: 72 of 74



Radiated Measurement Photos





No.: BCTC/RF-EMC-005

Page: 73 of 74



# **STATEMENT**

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without stamp of laboratory.

4. The test report is invalid without signature of person(s) testing and authorizing.

5. The test process and test result is only related to the Unit Under Test.

6.The quality system of our laboratory is in accordance with ISO/IEC17025.

7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website: http://www.chnbctc.com

E-Mail: bctc@bctc-lab.com.cn

\*\*\*\*\* END \*\*\*\*\*

No.: BCTC/RF-EMC-005

Page: 74 of 74